



Framework for Discussion NIF User Group Meeting

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Discovery Science Program on NIF

- DS Program is now a real program:
 - DS Program had 18 shot days (44 shots) in FY 2015, with a commitment to the same number of shot days in FY 2016-2018.
 - Experiments selected in 1st call 5 years ago were completed in FY 2015
 - Nine experiments selected in 2nd call in 2014 had their first shot days in mid-December, with more to follow in mid-February and beyond.
 - Four data acquisition, two platform-development, and one concept study proposals were selected in 3rd call in 2015, and will have their first shot days in mid-December 2016.
- The NIF User Group would like to thank the NIF leadership, especially Mark Herrmann; the LLNL NIF & Photon Science leadership, especially Jeff Wisoff; and the DS Technical Review Committee, especial former chair Chris McKee and current chair John Sarrao, for their strong support of the DS Program.
- It is now possible to think about ways to improve the DS program, based on real experience.



Call for new DS proposals in 2015

- NIF User Group recommendations for 2015 DS call:
 - Post criteria for proposal selection on NIF website.
 - Move schedule up so awards are announced by early December.
 - Consider holding a workshop at LLNL soon after the call goes out for scientists who are considering responding (Brown-bag sessions and NIF Forums via WebEx).
 - Consider down-selecting at some stage in the process.
- *The NIF User Group thanks NIF management and the TRC for implementing all four recommendations.*



NIF User Group recommendations for 2016 DS award process

- Encourage proposals with academic PIs and from new teams.
- Make clear what platforms and diagnostics will be available:
 - Designate a single person at LLNL who would be responsible for having accurate information on availability of platforms and diagnostics of interest to teams who are proposing
 - Require single POC for each proposing team to check with this person and transmit accurate information to proposing team.
- Require LOIs with enough information to enable feedback.
- Give feedback to proposing teams in response to their LOIs (as was the case in the 2014 award process).
- TRC unexpectedly awarded single shot days to existing teams to enable them to keep going, even though they had not yet had any shot days; give consideration to existing teams who did not expect this was possible and so did not propose it.



NIF User Group recommendations for DS proposal and shot-day cycle

- Some considerations:
 - Large teams are needed to do DS experiments on NIF; these are forming around topical areas and are likely to be relatively stable over time.
 - Academic teams do not have the resources to begin final experiment design until they have approved shot days; time for this should therefore be built into the post-award calendar.
 - Time needed for final experimental design is at least 6-9 months for new/novel experiments that are not closely related to programmatic experiments, and may be even for those that are; time needed for follow-on experiments can be shorter.
 - Shot days need to be no more frequent than every six months to allow changes in the experimental design.
 - Three-four shot days over two years is therefore reasonable.
 - Two years is a reasonable total time for an experiment.
 - DS shots every quarter is preferable for NIF.
 - While follow-on proposals may or may not succeed, the award process should expect them and be designed so the follow-on experiments go smoothly.



NIF User Group straw-man proposal for DS proposal and shot-day cycle

Calendar Year	Quarter	Cycle 1	Cycle 2
Y1	Q3 Q4	Proposal Award	
Y2	Q1 Q2 Q3 Q4	Design Design, target request Experimental prep Shot day	Proposal Award Design
Y3	Q1 Q2 Q3 Q4	Experimental prep Shot day Proposal Shot day, award	Design, target request Experimental prep Shot day Experimental prep
Y4	Q1 Q2 Q3 Q4	Experimental prep Shot day Experimental prep Shot day	Shot day Proposal Shot day, award Experimental prep
Y5	Q1 Q2 Q3 Q4	Experimental prep Shot day Proposal Shot day, award	Shot day Experimental prep Shot day Experimental prep
Y6	Q1 Q2 Q3 Q4	Experimental prep Shot day Experimental prep Shot day	Shot day Proposal Shot day, award Experimental prep



NIF User Group recommendations for new NIF platforms and diagnostics for DS

- Platforms:
 - ARC
 - MIFEDS
- Diagnostics:
 - Proton radiography
 - X-ray
 - Gamma-ray
 - TS diagnostic employing 3ω light, and eventually, 4ω and 5ω light